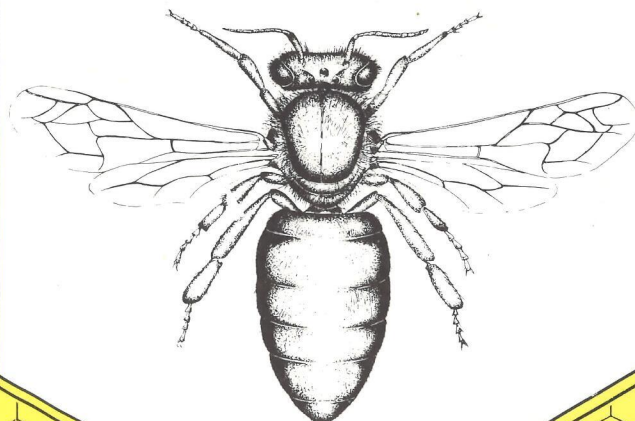


BAY OF PLENTY
COMMUNITY COLLEGE



BAY OF PLENTY
COMMUNITY COLLEGE

beelines

Number 28 August 1986

MAF Nelson Andrew Matheson Apicultural Advisory Officer

CONTENTS

	<u>Page</u>
Conference 1986	1-2
Nelson beekeeping statistics, 1986	3-5
Beeswax market	6
Venom allergies	6-8
Books for sale	9
Kiwifruit pollination - the afternoon decline	10-14
Kiwifruit pollination - use of pollen traps	14-16
Honey market deregulation	16-17
Trade table	18-19
Africanized honey bees	19-22
Honey labels	22-24
Log books for vehicles	25-26
Kiwifruit pollination - feeding syrup	28-30
Chalkbrood policy	30

* * * * *

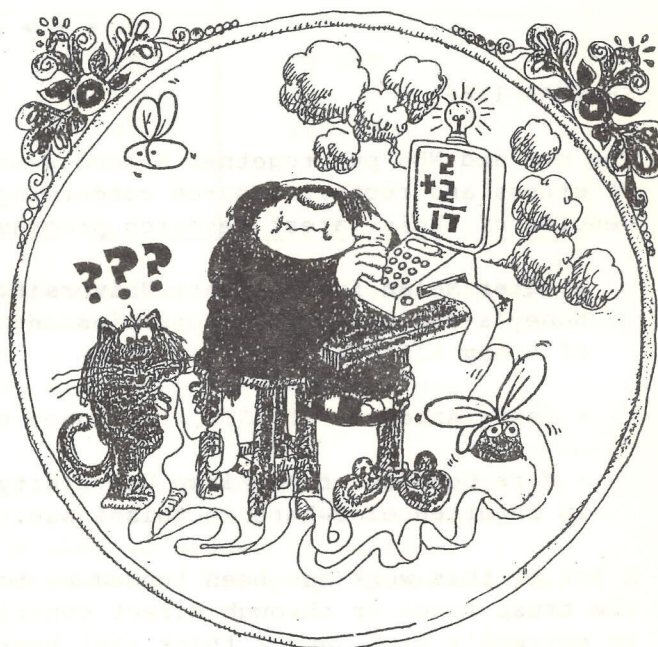
Welcome to *Beelines* - the "new look" beekeeping magazine from MAF's Nelson office. It continues the tradition established by *The Beekeepers' Bulletin*, which has now been published for 7 years. We've upgraded that magazine, to make sure you're getting information you want in a format that's attractive and readable. Our flash new cover was designed by Robyn Patterson, an adviser here in the Nelson office.

Remember that this is still your newsletter. If you want different articles in the magazine, or more or less of a particular type, then I want to hear from you.

I think you'll find plenty in this issue to keep you occupied on a winter's day. There have been some startling new developments in kiwifruit pollination recently, made by a Ph D student at Auckland University. I've written up some of them in this issue.

There's also a wide range of news and timely articles : how to stop your workers "croaking" after they get stung up; what's happening to the beekeeping industry in this area; export certification charges; the beeswax market; books to read; and lots more

To err is human...



to really foul things up, use a computer.

* * * * *

CONFERENCE 1986

This year's NBA conference was a resounding success - the organisation was very efficient, a lot of beekeepers came along, and (most importantly) those present really knuckled down to map out the best possible strategy for their industry.

You'll be getting full reports from your branch delegates and in the September *New Zealand Beekeeper*, so I won't go into too many details here.

The charging issue was one of the most important things discussed at Rotorua. Put simply, beekeepers can't go on expecting a continued free service by MAF - they'll have to start bearing the cost. It was gratifying to see that the industry readily accepts this principle.

The conference gave executive freedom to work out the best possible arrangement with MAF to provide for a continuation or improvement of the registration service, the bee disease inspection programme, and the export quality assurance programme.

2.

It looks like the fees will be collected in this way:

- each registered beekeeper will pay to MAF a registration or licence fee, probably about \$15.00 per year. This will pay for the costs of operating and maintaining the apiary register.
- hive levy payers will pay an increased levy to pay for most of the costs of MAF's inspection programme. The money will be collected by the NBA, and MAF will contract to do the work to certain agreed standards (for example a certain percentage of apiaries in a district to be inspected).
- the definition of hives on which a levy is payed will be broadened to include pollination and queen rearing hives (which probably are exempt).

* * * * *

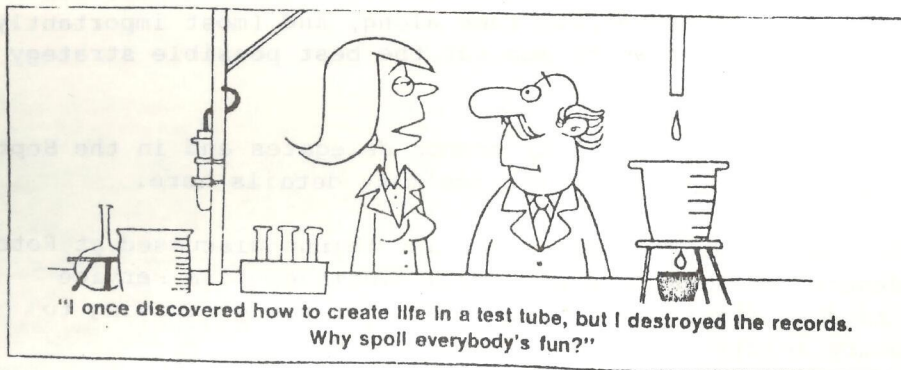
SEMINAR 1986

The MAF and NBA put together a good seminar programme, on the two themes of stress and recent research concerning beekeeping. Three speakers presented results of their latest research programmes:

- Peter Molan from Waikato University, whose students have been investigating honey's antibacterial properties and how to identify the floral sources of honey ("finger printing");
- Denis Anderson of DSIR, the honey bee pathologist;
- Mark Goodwin of Auckland University, whose work on kiwifruit pollination is reported elsewhere in this issue.

A lot of this work has been funded by the beekeeping industry, through the trust funds or through direct contributions. The quality of the research is extremely high, and I think that beekeepers can be proud of the way their industry has encouraged and supported this work.

* * * * *



INDUSTRY UPDATE

What's happening to the beekeeping industry in the Nelson district? MAF's statistics are collated at 31 May each year, and provide a useful benchmark for analysing industry trends.

In the year to 31 May 1986, beekeeper numbers were almost static, while hive numbers increased by 14%.

	Beekeepers	Apiaries	Hives
This year : 1986	596	2 268	25 907
Last year : 1985	583	2 133	22 775
Increase : 1986/85	+2%	+6%	+14%

This has continued a trend of the past three years, in which time beekeepers only increased by 4% but hive numbers grew by 29%. I think what we're seeing is existing beekeepers consolidating their position by building up hive numbers to a more economic level, and few new beekeepers are entering the industry.

This is in contrast to the previous, say, 5 years, when both beekeeper and hive numbers were increasing sharply. A lot of people were getting into the industry then, but now of course they've needed to multiply hive numbers more to make their businesses viable. The graph shows what's been going on.

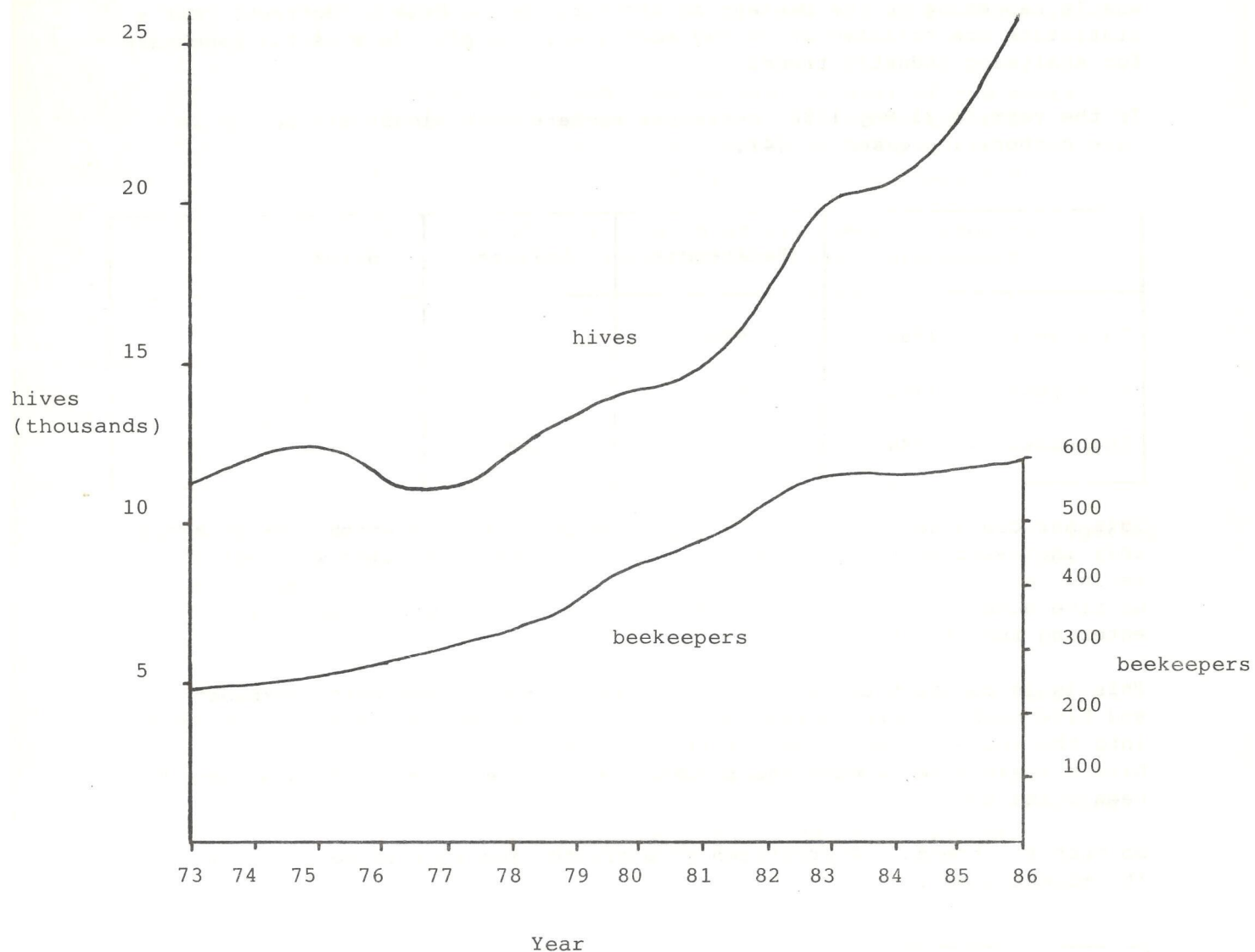
So much for trends. A breakdown of where the industry in Nelson is at the moment shows:

Nelson apiary district statistics, 31/05/86				
Hive hold Category	Beekeepers	Apiaries	Hives	% of district hives per category
1- 5	368	437	869	3%
6- 50	165	418	2 587	10%
51- 250	31	377	4 013	16%
251- 500	20	409	7 062	27%
501- 1 000	9	365	6 631	26%
1 000 plus	3	262	4 745	18%
Total	596	2 268	25 907	
1- 5	533	855	3 456	13%
51 plus	63	1 413	22 451	87%

Remember this is for the whole of my district : Nelson, Marlborough, West Coast.

4.

Numbers of registered beekeepers and hives
in the Nelson apiary district
1973-1986



Other highlights from the annual report:

Honey crop

Total crop of saleable, surplus honey	:	871 tonnes	(33.6 kg per hive)
1984/85 season	:	674 tonnes	(29.6 kg per hive)
Mean for last six years	:	505 tonnes	(26.3 kg per hive)

AFB levels

Diseased apiaries	:	141	(6.22%)
Diseased hives	:	287	(1.11%)

The figures are a little down on last year's, but still higher than the national averages of 3.9% and 0.9% respectively.

Developments that will strengthen your industry:

* Financial monitoring

A national system of financial monitoring is in place for the next season. This has had a false start, and has taken a lot of work to set up, but now we have an accurate tool to enable sound financial planning. It will help your industry to plan on a national level, it will help MAF plan, and it will be useful to you to see how the performance of your business compares with that of the "model beekeeper". I'll give more details when the system is operating.

* Exotic bee diseases

MAF's emergency response procedure (ERP) is operational. The manual for honey bee exotic pests and diseases has been finalised, and is now out to all regions.

* Kiwifruit pollination industry

The kiwifruit pollination industry in Nelson is a real example of "self-help". The beekeepers involved have put a lot of effort into:

- developing an industry organisation
- implementing quality standards for their service
- being prepared to be publicly accountable to these standards.

It's been the only way the beekeepers have been able to maintain their profitability despite the cost/price squeeze.



* Industry planning

This is going to be the only way your industry can continue achieving as much as it has in the past two years.

It's also the only way your industry can plan for the future in co-operation with MAF.

6.

BEESWAX MARKET LOOKS POOR

Beeswax exporters report a weak world market for beeswax. Returns to the New Zealand beekeeper are down in real terms by one third, compared with what they were 5 years ago. Current quotes are:

lemon	\$4 940 per tonne	f.o.b.
dark	\$4 040 per tonne	f.o.b.

Two years ago I wrote an article in *The Beekeepers' Bulletin* (February 1984) headed "Poor outlook for beeswax". In it I suggested that beeswax consumption was declining in the three main areas of use:

- beekeeping is becoming less popular overseas, with fewer people entering the industry or taking it up as a hobby.
- the Roman Catholic church no longer requires candles to be made of pure beeswax; two-thirds or half is OK.
- the cosmetic industry is turning more to synthetics to replace beeswax.

* * * * *

POLLINATION - HOT OFF THE PRESS

Just printed is a new AgLink on pollination. It's called "Honey bees : pollination of crops : economic significance and management" (FPP 860), and is by Trevor Bryant and Clive Vardy (AAO's).

The AgLink outlines how to prepare hives for pollination, and how to get the most out of them in the orchard. It reviews crops that benefit from insect pollination and lists hive stocking rates.

AgLinks are available for 50 c each from any MAF office.

* * * * *

DEALING WITH VENOM ALLERGIES

You might not be allergic to bee stings, but one of your family could be without you knowing. A lot of people can come in contact with your beekeeping : farmers on whose land you have sites, passers by, even traffic cops who pull you up for overloading when you're shifting 73 hives on a Toyota "Crumpmobile".



So you need to be alert to the possibility of someone near you having an allergic response.

I'm grateful to Chris Budgen for providing the following article:

Whenever bee (or wasp) venom is injected into your flesh, the damaged cells release a number of substances, mainly HISTAMINE. This produces the typical response of pain; redness and swelling. A small proportion

of the general public, and a large proportion of beekeepers' families, show a special sensitivity to the venom. This results in serious systemic effects such as asthma symptoms, generalised rash, vomiting, dizziness and fainting. This collapsed state may develop into generalised shock and death, so should be treated with alarm and urgency.

First aid

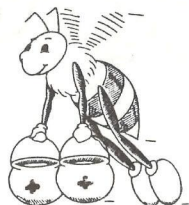
1. Scratch out the sting and spray on STINGOSE a corny name, but an effective new product. It's imported from Aussie, and boy, they should know all about bites and stings.
2. Chew one or two ANTIHISTAMINE tablets (or syrup) the best one (and most expensive) is another new product called TELDANE tablets. It is the only one of the antihistamines which does not diffuse into the brain and cause drowsiness; don't be fobbed off with any alternative. But if a little drowsiness does not bother you, ZADINE is the next best product, and a lot cheaper. If you are doing pollination work at night ONLY use TELDANE. Also don't stop off at the Riwaka Hotel or Moutere Inn after shifting hives, if you've taken any antihistamines! What a dilemma.
3. Itchiness of the skin is best treated with HYDROCORTISONE CREAM 0.5%, available from your pharmacist as SKINCALM or CORTAID better than antihistamine creams. The time-honoured CALAMINE CREAM is also quite soothing.
4. For anyone beginning to show the generalised systemic reactions mentioned above, an injection of ADRENALINE and PHENERGAN (antihistamine) is urgently needed. Few apiary sites are located next to your local doctor, so he/she may provide you with an emergency kit containing these and a syringe for self (or other) injection.

The next best treatment is an aerosol inhaler containing adrenaline called MEDIHALER-EPI. This can be purchased at your friendly neighbourhood pharmacy, but at about \$20 each it might be worth seeing your doctor for a prescription. Two or three puffs inhaled immediately, then repeated in about 20 minutes, will help. But you should be well on the way to the doctor by then. The problem with an inhaler is that it is useless if the victim is unconscious as I realised when my daughter collapsed on me.

Those people known to react seriously to stings may be referred to Nelson hospital by their doctor, for a course of de-sensitising injections (diluted bee venom).

SUMMARY ADVICE: Be prepared, have the gear with you in the truck, as much for other people as yourself. If you or your helpers are "jumpy" about stings then take a TELDANE or ZADINE tablet half an hour before you go beekeeping. They are more effective taken before you are stung, and it should avoid the flap and panic when the first one gets inside your veil.

Chris Budgen
B. Pharm(er)



Here's what you should consider having on hand. Supplies are available from your friendly neighbourhood pharmacy "Chris Budgen Pharmacy" if you live near Mot.

For the sting site : STINGOSE.

Antihistamine tablets : TELDANE (or ZADINE if you want a ZIZZ).

To counteract itchiness : SKINCALM or CORTAID, or even CALAMINE cream.

To treat systemic reactions : an injection of ADRENALINE and PHENERGAN or the inhaler MEDIHALER-EPI.

* * * * *

FROM THE SO-YOU-THINK-YOU'VE-GOT-PROBLEMS DEPARTMENT

Inflation in Mexico is a little above target this year - well double the target actually, at around 100%. A wage rise of 25% doesn't help too much, even for those lucky enough to have a full-time job.

The most staggering price rise is the 5 000% increase forecast in fares on the Mexico City underground, from one peso to 50 pesos. The cost of a ride was always subsidised by Mexico's huge oil revenues, but as they've dried up in recent years a price hike is needed. When I was in Mexico three years ago that one peso ride cost about one cent in New Zealand money - with the rapid sinking in value of the peso it now costs only about a quarter of that. Who says there's no bargains left in the world?



Ron Trotter (of Fletcher Challenge) on New Zealand's floating dollar:

"About half of New Zealand's traders think the \$NZ is too high, about half think it is too low, which is why it is where it is".



BOOKS FOR SALE

At the moment I have a very big range of beekeeping books in stock, for sale on behalf of the International Bee Research Association. The titles and authors are listed below - if you'd like to know more about any of them, let me know and I'll send a brief outline of what the book covers, the price and so on.

Diseases

Honey bee pests, predators and diseases (Morse)
Honey bee brood diseases (colour photos)

Honey

Honey - a comprehensive survey (Crane)
Directory of world honey sources (Crane)

Pollen

Pollen loads of the honey bee (Hodges)

Honey bee

Anatomy of the honey bee (Dade)

Beekeeping

Some important operations in bee management (Johansson)
Apiculture in tropical climates (Nairobi conference, 1984)
Queen rearing (Ruttner)

Pollination & pest control

Pollination directory for world crops
The impact of pest management on bees and pollination
Pest control and safety for bees

Miscellaneous

A lot of reprints (about \$3 each) on subjects like venom allergies, bee behaviour in kiwifruit, "acarine" mite and varroa mite.

Contact me for further information on any of these.

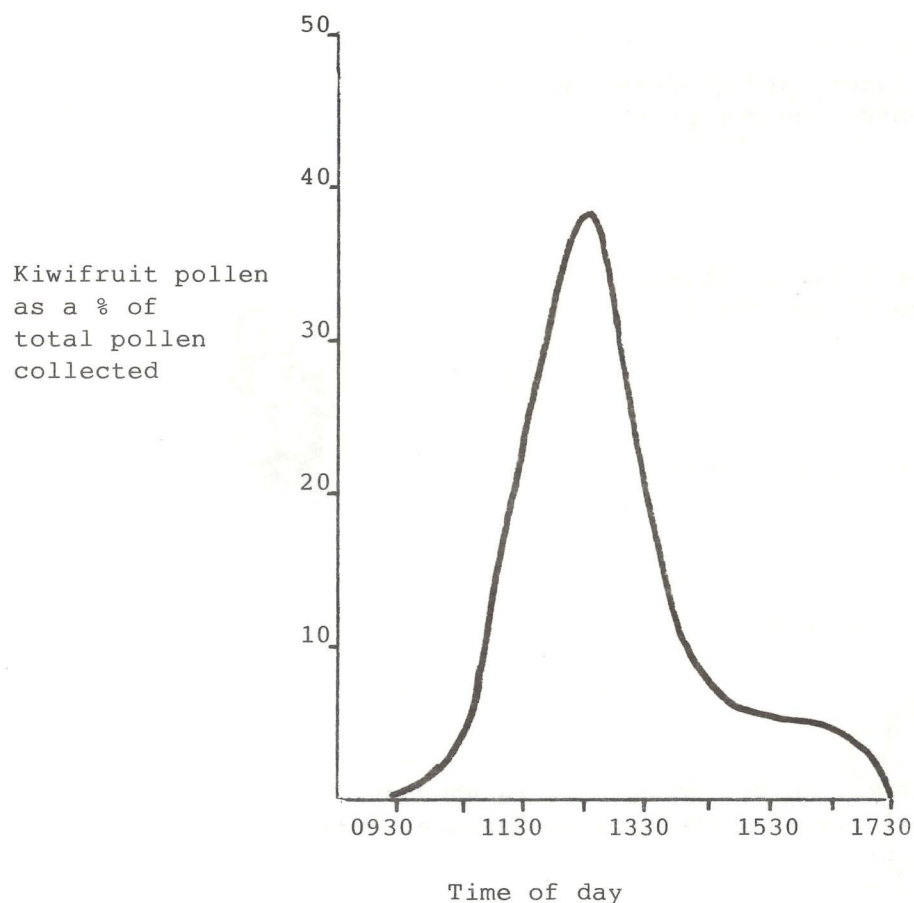
* * * * *



10.

WHY DO HONEY BEES WORK KIWIFRUIT IN THE MORNING?

Many people have observed that honey bees collect kiwifruit pollen mainly in the morning. When afternoon comes the pollen entering the hive changes - there's less from kiwifruit and more from other species.



Graph : Kiwifruit pollen collection results from one day's trapping near Auckland.

Different theories have been put forward to explain this afternoon changeover. The one that's quoted most often is that kiwifruit pollen is "dry and rather unattractive", and that in the morning bees can collect it more readily because it's still damp with dew.

Now some more research has shown a different answer, and the results give us a lot better understanding of what is going on during kiwifruit pollination. They come from work done by Mark Goodwin, a Ph. D. student at Auckland University whose studies on sugar feeding are also reported in this issue of *Beelines*.

When bees start collecting kiwifruit pollen

Because kiwifruit pollen is collected mainly in the morning, we've made extra efforts to get pollination colonies foraging as soon as possible. Ways of achieving this have included placing hives where they get the morning sun, lifting them up onto bins or pallets where it's a few degrees warmer, and even putting sugar syrup out in the open at 6.30 in the morning!

But bees can't collect kiwifruit pollen until it's ready and waiting on the flower, so Mark Goodwin first looked at when the pollen becomes available for collection.

Pollen is produced in parts of the flowers called anthers, and isn't available to bees (or anything else) until the anthers have split open - a process called dehiscence. This takes place after the flower has opened.

Male flowers that are going to open on any particular day mostly do so by about 7 am. However, no pollen is available to bees until the anthers have split, and this doesn't happen until later. The anthers split between 8.25 and 11.00 in the morning on the day the flower opens. On each of the two following days the anthers don't split open any more, but they do shed more pollen at about the same time in the morning.

Anthers on female flowers (which honey bees visit for pollen too) also split open in the morning and release pollen, and each subsequent morning split open a little more and make more pollen available to bees. This goes on for five mornings, until the anther is completely open and all the pollen made available.

So we know that kiwifruit pollen usually becomes available to bees in the morning - from about 8.30 am onwards. There's not a lot of use getting the bees to forage much earlier than that in an orchard well stocked with bees, because there's simply no kiwifruit pollen available. As a civil servant I can only admire the honey bee's ingenuity in this matter!

That's what controls when the bees begin to collect pollen in the morning - what makes them stop in the afternoon?

The afternoon decline

You can see how bees knock off in the afternoon when working kiwifruit, simply by trapping pollen throughout the day. The graph shows this - kiwifruit pollen starts appearing in the morning (usually by about 8.30-9.30 am), rises rapidly in the morning to reach a peak just after midday, and drops off rapidly in the afternoon. Again it looks like bees would make perfect civil servants.

I mentioned before that some people have suggested this decline is caused by the pollen becoming dry and difficult to work. Mark Goodwin's results put forward another reason - that the supply of kiwifruit pollen simply runs out in the afternoon. In other words, in a well-stocked orchard without serious floral competition, bees are removing about all the pollen that is available.

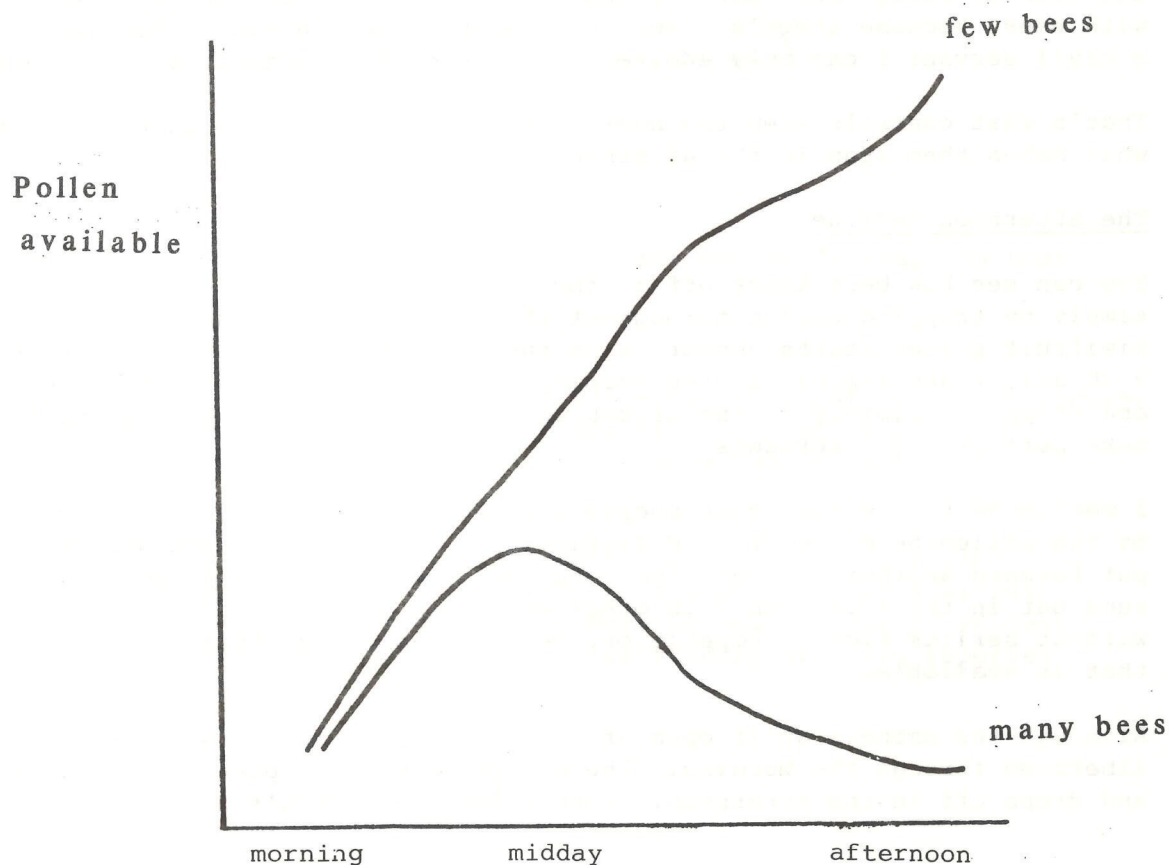
Although the anthers split open around 9.30 am, pollen is still being liberated through the morning. The pollen liberation peaks about midday, and drops off in the afternoon. Sounds familiar doesn't it?

If the pollen is not removed, it just accumulates during the day so more and more is on the flower. But in fact pollen is removed in a well-managed orchard, by a high density of honey bees. In that case the amount of pollen available increases during the morning, peaks in the middle of the day, and drops off in the afternoon.

The foraging pattern of honey bees in a kiwifruit orchard is influenced by the availability of pollen. When it becomes less abundant, colonies move to foraging on other plants. Honey bees have a very efficient foraging system. Their dance language means that foragers are only sent out to work flowers that are worthwhile. When flowers become less productive, as kiwifruit usually does in the afternoon, foragers dance less to direct bees onto that crop, and more to send them elsewhere. (Native bees and bumble bees, of course, don't have such a communication system and thus can't maximise their foraging in the same way).

Mark Goodwin tested this theory by looking at how much kiwifruit pollen was available in an orchard with lots of bees, and also in one with few bees. The results are shown in the next graph - with few bees in the orchard, pollen just keeps accumulating during the day. In a well-stocked orchard, pollen becomes more abundant in the morning as it's continuously released by the anthers, but there is less in the afternoons as it is removed by bees and not replaced.

Removal of pollen by honey bees



What this means for pollination

- There may be no need to get bees out of bed before 8 o'clock. Don't take that as an excuse for being slack about hive placement : any colonies that don't get sun until mid-morning could still miss out on a lot of valuable foraging time.
- It may be a good sign to see honey bees working kiwifruit in the morning, and then moving in the afternoon/evening to other plants. This could indicate that the orchard has more than enough bees. (There could be other reasons, though).
- Kiwifruit pollen is attractive to honey bees, and pollen-collecting bees readily visit the flowers when pollen is available. The efficiency of the honey bee's communication system means that visitation decreases rapidly when pollen becomes less available.
- The proportion of the total pollen collected by a colony that comes from kiwifruit depends on the time of day, and also the presence of competing pollen sources. Over the kiwifruit blossom period, kiwifruit pollen makes up anything from less than 20% to nearly 100% of total pollen collected by a colony.

For the future

It might be possible in the future for growers to monitor their pollination on a daily basis. Too much pollen left in the kiwifruit flowers in the afternoon means there's not enough bee activity. That problem could be rectified by putting in more and/or better hives, and also reducing floral competition.

At the moment to do this you'd need a microscope and a special device called a haemocytometer, but it might be possible to work out a quick field test.

For now though, these results knock on the head the idea that kiwifruit flowers are unattractive to honey bees, and they don't like its pollen. In fact they collect the pollen until it's all gone, and go back next morning to ask for more.

References

- Goodwin, R.M. 1986. The afternoon decline in honey bee collection of kiwifruit pollen. Unpublished paper presented to the Entomological Society of New Zealand conference, Wellington, 19 May 1986.
- Goodwin, R.M. 1986. Anther dehiscence and the daily collection of pollen from kiwifruit flowers by honey bees. New Zealand Journal of Experimental Agriculture 14 (in press).

* * * * *

BUZZING OFF FOR A WHILE?

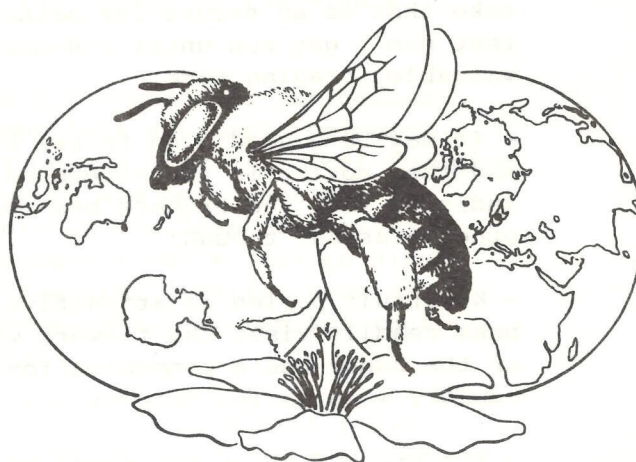
If you're planning an overseas trip in the next couple of years, here's a couple of dates you ought to note down.

- * Apimondia is in Poland next year, from 19-25 August 1987. I haven't heard yet if a New Zealand tour is going, but you can get congress enrolment forms from:
Apimondia, Corso Vittoria Emanuele 101, Rome 00186, ITALY.

14.

- * And closer to home, Australia is hosting an international beekeeping congress in 1988, their bicentennial year. It will be held in Brisbane from 21-26 July, 1988.

Further information from the
organising committee secretary :
T Weatherhead, 12 Langley Road,
Camira, Queensland 4300.



* * * * *

SWARM LISTS

If you'd like to be told of swarms in your area, leave your name, address and phone number with your nearest MAF office. That way you get to hear about swarms to collect, and we get irate members of the public off our back.

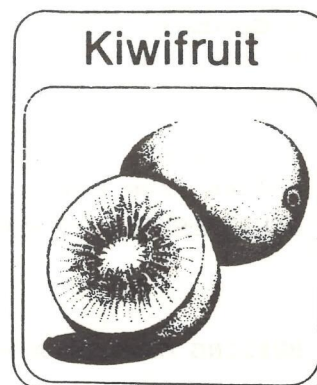
* * * * *

PUTTING POLLEN TRAPS ON KIWIFRUIT HIVES

How much do pollen traps increase pollinating efficiency? Many experiments have been done to try and answer that question, but the results have been contradictory.

To get more pollination from a colony we need to increase the amount of pollen collected by that colony, at least for kiwifruit and many other fruit crops. To increase the amount of pollen collected by the colony we could try several different techniques:

- increasing the activity of the bees already gathering pollen,
- increasing the overall number of foragers (if the same proportion still collected pollen),
- increasing the proportion of foragers that collect pollen (if the number of foragers didn't decrease,
- some combination of the above.



How does pollen trapping fit into this? What could result in more pollen collected is a pollen trap that removes a significant amount of pollen,

but doesn't cut down brood rearing too much. If brood rearing diminished a lot, then the resulting loss in pollen-collecting stimulus would more than offset any gains caused by the trap.

Pollen trap efficiency is a measure of how much of the pollen brought back by the colony's foragers ends up in the trap drawer. It's fairly easy to measure, by counting pollen foragers at the entrance over a certain time, and counting the pollen pellets that end up in the drawer over the same period.

Quite a few factors affect pollen trap efficiency, such as the wire size, spacing of wire grids, or size of round holes in a perforated plate. It seems that the pollen flow affects the efficiency too. Malcolm Levin of Arizona tested two types of modified OAC traps (the design most common in New Zealand) : in one location their efficiencies were 46% and 21%. In another location in the same month, the efficiencies were 65% and 52%. At the second location the pollen flow was heavier and the pellets bigger, which could have accounted for the increased efficiency.

What about the effects of pollen traps on the colony's pollinating efficiency? Two studies were carried out in Californian almond orchards, by Robbin Thorp of the University of California and Gerald Loper of the US Department of Agriculture.

Loper found that a trapping colony gathered 60-70% more pollen than a non-trapping colony. His OAC traps were 16% efficient, and didn't affect brood-rearing much over the 2 1/2 week almond blossom period.

Thorp found more bees foraging from his trapping colonies, as well as a higher percentage carrying pollen. The efficiency of his (OAC) traps isn't known, but they did depress brood-rearing. Indeed, when Loper repeated his study the following year with 64% - efficient traps, brood rearing dropped by 38% after only 10 days.

Perhaps this difference in trap efficiency accounts for the very different results from a variety of experiments.

In a detailed study of pollen trap efficiency, Levin and Loper commented that "on crops for which pollen-collecting honey bees are more efficient pollinators than are nectar collectors, ... pollen traps can increase pollination efficiency by causing the bees to collect more pollen. If the efficiency of the trap is not above 60%, pollination efficiency can thus be increased without noticeable effect on brood rearing. This will be especially true when the pollen flow is heavy, (as other studies have) found a reduction in brood with a light pollen flow and trap efficiency estimated at 64%".

Pat Clinch of MAF has looked at the effect of trapping on kiwifruit pollination colonies. The results have been inconsistent - in some years trapping increased



the pollen gathering of colonies, but in other years they seemed to have no effect. We still don't know enough about the effects of pollen trapping on kiwifruit pollination colonies to make a firm recommendation on their use. I think that all we can say at present is that traps don't decrease pollination efficiency in kiwifruit, and in some years they make colonies better pollination units.

Levin, M.D.; Loper, G.M. 1984. Factors affecting pollen trap efficiency. *American Bee Journal* 124 (10) : 721-723.

Loper, G.M.; Levin, M.D.; Walker, G.D.; Thorp, R.W. 1984. Pollen trap efficiency, brood-rearing, and trapping precautions. *American Bee Journal* 124 (4) : 291.

* * * * *

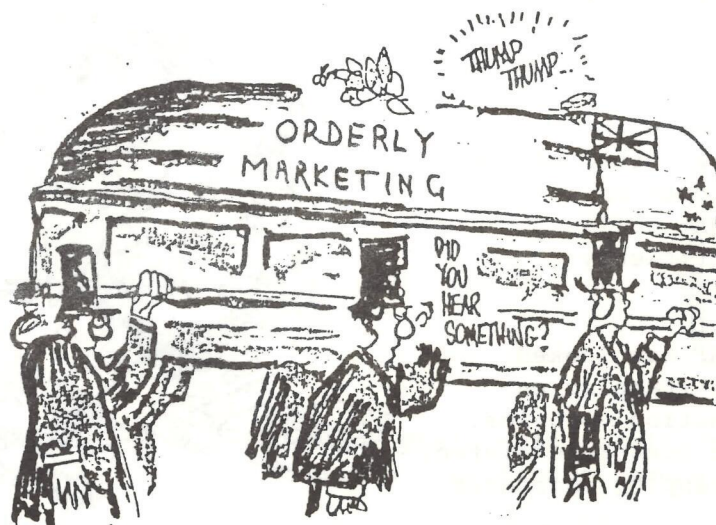
HONEY DEREGULATION - AN EXAMPLE FOR OTHER INDUSTRIES?

The honey industry has been deregulated since the HMA's export control was removed in 1981. The cover story in the latest *Agricultural Economist* looked at what's happened to the honey industry since then, and how this might give a clue to the soon to be deregulated town milk and egg industries.

With the absence from the honey industry of what was termed "orderly marketing", and some price-smoothing arrangements, many people predicted:

- very unstable prices on the local market, with honey floods or droughts depending on world prices,
- weak sellers lowering the return to New Zealand exporters,
- business failures,
- low prices for beehives.

To see what really happened the article's author, a Massey University rural economist, looked at : the number of producers the levels of honey production; prices received; and the sale price of hives.



Number of producers

From 1981 to 1985 beekeeper numbers went up by 39% and hive numbers by 30%. In beekeeping there has been a substantial net inflow of new producers, in contrast to the general trend in agriculture of fewer production units.

Levels of output

The four year period since deregulation in 1981 contains the two lowest production years over the last 15 years, which makes it difficult to assess the effect of deregulation on output. However, it is worth noting the highest output ever was recorded in 1985. This does indicate that deregulation has not affected the industry's productive potential.

Prices received

Mr Ward analysed honey prices since 1981. They were somewhat distorted by the price freeze under the previous government, but he concluded that there is no evidence of excessive price instability at wholesale level since deregulation.

Hive values

It's difficult to determine how hive values have changed, but their current selling price "could not be associated with an industry suffering from a loss of confidence".

Mr Ward concludes that:

"Certainly the dire predictions of the imminent demise of the industry in the absence of a Honey Marketing Authority vested with sole export rights have not as yet been fulfilled. Experience to date has been the reverse, despite large fluctuations in seasonal supply and difficult trading conditions overseas".

Ward, A. 1986. Honey changes may mean marketing authority answers. *Agricultural Economist* 7 (1) : 25-28.

* * * * *

THE NOSE KNOWS?

Murray Reid told me recently of a beekeeper in his region who diagnosed a "foulbrood" hive recently by the not-to-be-recommended method of olfactory detection. He lifted the lid, took a whiff and closed it up again to wait for the MAF man to visit a few days later. Well, Murray lifted the lid and smelt a smell too but it wasn't foulbrood. The odour was coming from a dead mouse on top of the inner-cover! Blush, blush, red face, embarrassment ... and another lesson learnt.

* * * * *

TRADE TABLE

- * David Newbury, Southbridge, Canterbury, makes "Symes-style" galvanised lids. These have no wood in them, and have ends bent in such a way as to hold the lid to the top box. This means they can never blow off, and don't need boulders heaved up on top.

They cost about \$6.50 if made from 24-gauge galvanised, which apparently have the same strength as ones of 20-gauge which cost \$9.71.

- * Complete honey house equipment; extractor, two sets of scales, hot top, steam equipment, wax-rendering plant, and more.

Contact: George Winslade
51 Eden Street
Oamaru

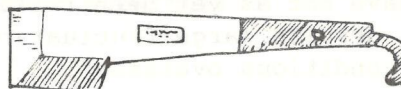
Phone (0297) 45 270

- * Hives. There's a lot of hives for sale at the moment. See the latest *New Zealand Beekeeper* for details.

- * Tecpack Plastics (P O Box 713, Dunedin) are now making 1 kg and 2 kg polypropylene honey containers with their safety lid, as well as the 500 g pot which is the same shape as the old wax pottle. They can be ordered in white or coloured, and also come plain, with standard honey print or custom-printed.

- * Some people have had trouble getting copper naphthenate ("Metalex") from the oil companies. It's now available as Protectex from:

Dimet
P O Box 25 142
Christchurch



Phone (03) 790 096

Ask for "Green Protectex concentrate". Cash prices are:

5 litre	:	\$36.00
20 litre	:	\$127.00
209 litre	:	\$879.00

- * A new heating pad is on the market. It's called the "Techno heater", and consists of a flexible sheet of graphite-impregnated heating material. There are fine copper strands embedded in the sheet, and current passing through these gives off heat.

The sheet is flexible and comes in different sizes. It's said to have a number of advantages over heating cables (like "Pyro"):

- heating is even : there aren't any hot or cold spots.
- punctures in the sheet don't stop the current flowing : it just goes around the break.
- there's no chance of electric shock.
- it is lightweight and flexible.

It looks suitable for wrapping around tanks and pipes, or for melting out 200-litre honey drums. Techno heater can also be used for floor heating.

Standard sizes range from 2.4 x 0.3 m to 3.0 x 0.9 m, though other sizes can be built. Prices range from \$158 to \$319 for these sizes, plus \$45 for a solid state controller.

The New Zealand agent is Tech Mirage Industries, P O Box 51 518, Pakuranga, Auckland. Phone (09) 562 257.

* * * * *

AFRICANS LOOSE IN THE AMERICAS

We know that there's still a lot we don't know about the Africanized bee in South America. Is it a "killer bee", or is it a bee that, with the right management, US beekeepers will be able to cope with?

The Africanized honey bee, or AHB, has moved through Central America almost to Mexico, and is expected in the southern USA in 2-3 years' time.

A group of US beekeepers recently went to Central America to see the AHB for themselves. Led by Troy Fore, editor of the monthly newspaper *The Speedy Bee*, they spent ten days in Panama, Costa Rica and Mexico. Their report makes interesting reading.

Panama

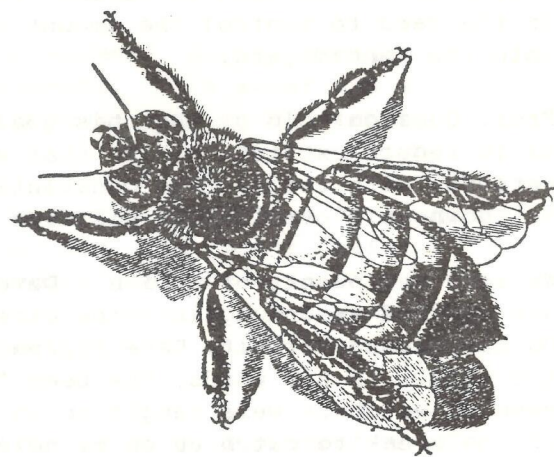
* Ships take 24 hours to pass through the Panama canal, some of which time is spent at anchor. Swarms have at times settled on boats, and this is a feasible way for the AHB to come to New Zealand. It's been reported on ships as far away as Canada and England.

* In the four years that AHB have been in Panama, hive numbers there have dropped from 24 000 to about 12 000.

* Production has dropped from about 75 kg/colony to 35-40 kg/colony.

* A larger commercial beekeeper there (with 450-500 hives, down from over 600) reports that:

- production is more affected by climate than the AHB,
- the AHB is certainly more aggressive than European bees,
- some AHB's swarm more readily than European bees,



20.

- queen rearing is very difficult, because of "squatter queens" invading the queen-raising hives,

- requeening is difficult because of the way AHB's run, and the way beekeepers need to get in and out of hives quickly. (Bees run in the hives, beekeepers run in - and out of - the apiary).

- * To reduce stinging, this beekeeper has moved sites at least 200 metres from houses or roads, reduced them to 20-30 hives each, and spread the hives out more. They used to be on stands of 5 hives; now they're on individual or two-hive stands. The hives sharing a stand are a metre apart, stands have to be 3 m apart, and rows 5 m from each other.

- * The tour visited a rather run-down yard. "While we stood at the end of a row of hives one of the group hefted the back of the end hive to check the weight. In moments the air was filled with bees. Unfortunately, the sudden attack was unexpected, and some of our number were unprepared and didn't have their gloves on. Soon several of our group, including experienced, commercial beekeepers, had left the yard". Yet another hive in the yard was very quiet. Perhaps it "was still headed by a European queen installed by the owner. It showed every evidence of being such".

Costa Rica

- * The group visited an apiary belonging to a university beekeeping professor.



"Here, as we had done in Panama, we decided to limit the number of people in the yard to control the amount of disturbance. Just four people went into the fenced yard.

Prof. Quezada told us that his goal was to work the hives in such a manner as to reduce excitement. To that end, he normally used a crew of five persons, with two of them constantly smoking colonies. The rest of us sat down on a overlooking hillside 70 metres away to watch the action.

We soon saw plenty of action. Dave smoked all 22 hives in the apiary and started around again. The other three guys were checking colonies. On his second circuit, Dave approached a hive in a distant corner of the yard. In his words, the bees "exploded" out of the hive. In moments even we watchers were caught up in the action. I was taking advantage of the break to catch up on my notes; my bare hands became targets for the attacking bees. We watchers either suited up and headed into the yard or took flight".

- * In the immediate area two people had recently been stung to death, and a number hospitalised. (This was not related to the visit described above).

- * Another beekeeper has bees of various degrees of Africanization. His beekeeping has changed with the coming of the AHB - now he locates apiaries at least 200 metres from houses, and away from any farms. He likes working hives with a crew of 3 : one working a hive, one smoking that hive, and another continuously smoking the other hives in the yard.

* Sometimes the AHB is peaceful, if the colony is weak or has a good nectar flow. If the colony is strong and has nothing to do "they will do it with you", as one local beekeeper says.

Venezuela

Also writing on the Africanized honey bee recently was Jim Tew, a lecturer in beekeeping from Ohio. He spent a short time in Venezuela on a research project and commented that:

I suppose that I hoped that someone was exaggerating all those stories (that I had actually grown tired of hearing). Honestly, within 20 minutes of being in Africanized hives I knew that, at least for this yard, the reports were true.



Trying to describe what we saw is difficult. Africanized bees are obviously honey bees. They look familiar. I mean the hive, the frames, and the bees all look the same. But things generally end with that outward appearance. The bees I saw do everything too much. They sting too much, they run too much, they swarm too much, they supersede too much. They take flight immediately, they cluster under the bottom board, they run up the inside walls of the colony. In general, they're very skittish.

Please understand the bees can definitely be worked. Any experienced beekeeper could work his way through the colonies. This never was a problem. But compared to the bees we have here in the United States, these bees were crazy.

Now, I'm fully aware that a number of people in the US believe Africanized bees won't be a problem. Maybe over the long run, they won't, but I really don't want the bees that I saw in Venezuela anywhere in Ohio. As an educator and extension specialist in apiculture, I don't want the task of having to convince new beekeepers that working with these nasty bees can be an enjoyable hobby.

The arrival of Africanized bees in the United States will present a definite, but not unsolvable problem. We are going to need research support to develop new bee strains and new managerial techniques. We are going to need strong extension support to entice individuals into our beekeeping industry and at the same time, reassure the public. It is going to be a really big job.

New Zealand

It's plain to see that we don't want this bee in New Zealand. The effects of the AHB on our beekeeping, and on our queen export prospects, would be serious. The only ways for it to come are as hitchhikers on a ship, or through illegal queen imports.

22.

MAF's quarantine service does an excellent job inspecting ships on arrival and monitoring inward mail. It's in your interests to report to MAF any suspicion of queen imports.

(Source: The Central American study tour was reported by Troy Fore in the March and April 1986 issues of *The Speedy Bee*. Jim Tew's comments were in the April 1986 *American Bee Journal*).

* * * * *

EXPORT CERTIFICATION

MAF has been charging for issuing export certificates since 1 October last. The fee presently covers one-third of the costs of visiting properties for certifying exports, and from 1 October 1986 two-thirds of the costs will be recovered.

There's now also a fee of \$4 being charged for certificates issued across the counter for export produce. This is to recover the same portion of costs for certificates issued in the office as we charge for those involving field work.

* * * * *

HONEY LABELS

If you're putting together a new honey label for this season, here's a few things to consider.

There are some legal requirements for labelling honey. First of all it has to have a label - elementary I know, but if you'd seen some of the comb honey I've observed in shops you wouldn't think so.



Secondly, the honey container must have a place with three things on:

- the name of the food (eg "honey", "pure honey", "comb honey").
- the net weight of the contents.
- the trading name and address of the manufacturer or seller or packer. If you trade as a company, the name of the business and town where its office is located will do. Otherwise it must be the full postal address.

On a cylindrical ("round") container, that information can't extend round more than one-third of the circumference. That's so consumers don't have to hunt for it.



That's about all there is to legal requirements, but here are a few extra things that I've noticed on honey containers recently. You might not want to use any of them, but if you feel like doing a "rave" about your honey they might be useful:

- floral source(s)
- geographical source
- flavour
- colour
- consistency (granulated or liquid. How to soften concrete honey).
- nutritional components (I'm not too keen on this because I don't think honey has many. Beware of outrageous claims for health-giving properties. And for some obscure reason, you're prevented by law from claiming that honey's food value is superior to that of sugar).
- uses

24.

- processing conditions (whether it was extracted in a gleaming example of stainless steel hi-tech, or squeezed through a sweaty sock into an old bath).

New Zealand market research has shown that people like to see on their honey pots: bees, flowers and (for reasons known only to Walt Disney) bears. For all that I'm not too impressed with bees on honey pots - the good artists manage to draw drones, while the rest do blowflies. The image of honey suggests that labels are better to include flowers, native bush and scenes of our good ol' nuclear-free landscape.

* * * * *

You know you're getting old when:

You begin to outlive enthusiasm.
You decide to procrastinate but then never get around to it.
Your mind makes contracts your body can't meet.
A dripping tap causes an uncontrollable bladder urge.
You know all the answers, but nobody asks you the questions.
You look for a chair before starting a conversation.



* * * * *

Computer still in the shop, Jenkins?

PESTICIDE ANALYSIS - UK STYLE

From the *British Bee Journal* for January 1986 comes the staggering news that private analysts checking honey bee samples for insecticide poisoning charge at least £250 when the insecticide concerned is known, and up to £1 000 per sample when it is not.

* * * * *

BECOME DESTRESSED, NOT DISTRESSED

Several speakers at the Rotorua beekeepers' seminar gave excellent personal accounts of how stress has affected them, and ways they've helped to avoid it.

Some selections:

- work set hours as much as possible; this is fairest on the family.
- have Sundays free except in the pollination season.
- don't think of yourself as indispensable (if you have to go into hospital you'll find that you're not).
- keep in touch with your financial progress : two-monthly updates avoid the fear of not knowing.
- take three weeks' holiday each year.
- ignore weather forecasts on the night before; you can't affect the weather and often the forecasts are wrong anyway.
- plan your work, and work your plan.

VEHICLE LOG BOOKS

You too can be like a civil servant and have to fill in a running sheet at the end of every journey. Now you need a log book in each vehicle that is used for a mixture of private and business running. You will NOT need one in any vehicle that is used only for business running (such as your truck).

LOG BOOK

Vehicle no Month

Date	Journey	PVT KM	Bus KM	Speedo Reading

EXPENSES

Month

Date	Service station	Petrol oil	Total	GST
		\$	c \$	c

The purpose of this new requirement is to more accurately apportion vehicle expenses between private and business use. It replaces the arbitrary allocation of, say, 50% or 75% of costs against the business.

The new rules took effect from 1 April 1986, so they apply from the 1986/87 financial year (whenever that starts for you).

A few points about the changes:

- you have to be able to accurately record the total distance travelled by a vehicle for both business and private use.
- a log book is needed for vehicles used for both purposes, but not for ones operated only for the business.
- you don't need to send the log books in to the IRD with your accounts, but they must be available for audit.



26.

- a detailed record must be kept of the expenses for each vehicle (you'll see why in a minute). This includes fuel, registration, repairs and so on.

- the expenses for a "mixed-use" vehicle are allocated according to the relative amounts of business and private use. For instance:

Utility

business	:	18 000 km	(75%)
private	:	<u>6 000 km</u>	(25%)
total	:	24 000 km	

Expenses total \$15 840 (both direct running costs and depreciation). These are divided : 75% to the business, and 25% to private use.

business	:	\$11 880
private	:	<u>\$3 960</u>
total	:	\$15 840

So far, so good, but this calculation won't be possible unless you do some recording. The bills you get from garage won't be divided up according to vehicle type - you'll just get accounts for "Fuel - \$1 800, Oil \$100" and so on.

You'll have to record expenses against each vehicle as you make purchases. Fortunately, there are log books now being sold for this purpose by commercial stationers.

What a lot of extra work. Why should you bother with it? The simple answer is that from now on you can only deduct 25% of the operating costs of mixed-use vehicles unless you keep a log book to prove a higher use. I suppose it won't take people long to realise that if a log book shows business use (of, say, a car) is less than 25%, the log book might get thrown out the window on a winding back-road ...

* * * * *

BRANDING HIVE PARTS

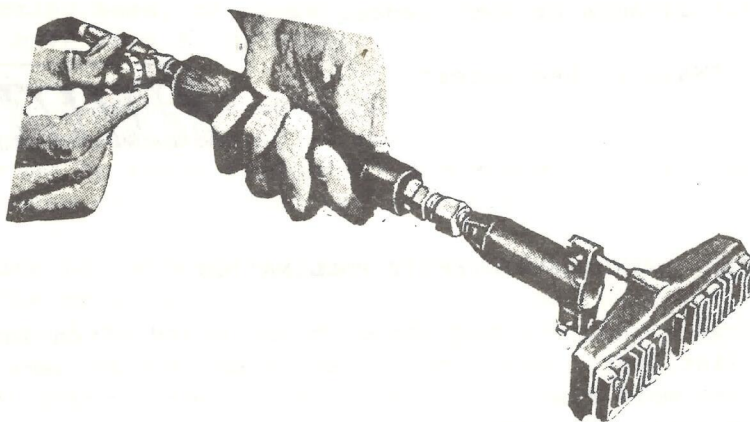
In the past I've talked a lot about branding your hive equipment. It helps to protect you from theft, and helps us to identify apiaries.

One of our beekeepers found out the hard way how important this is. He'd bought a brand a while ago, and had used it to brand the new frames assembled since then as well as all his boxes. Very efficient and well-organised, but I suppose there's no accounting for the deviousness of the beekeepers who helped themselves to the unmarked frames inside. Someone removed the contents of the brood nest of quite a few hives at one apiary, leaving the branded "outers" behind.

Hive "rustling" (or theft as it's properly known) hasn't been a problem in this district. In other parts of the country it has been much more common than in the Nelson region. Help to stamp it out here before it starts, by:

- branding all your hive parts, including frames.
- report to the police any cases of hive theft.
- when you sell branded gear, make sure you draw up a bill of sale, listing how many branded components are being transferred to the new owner.

A policy on erasing old brand numbers is being drawn up by MAF in consultation with your executive. Details will be released later this year.



* * * * *

PAYING FOR APIARY SITES

A word of warning to those of you who keep bees on crown land. The *National Business Review* recently reported that commercial users of national parks, state forests and reserves are soon to pay more for the privilege.

According to the article, timber merchants, tour operators and "honey merchants" will have to pay higher rentals, to compensate for the value of the products removed from public land. This revenue generation will partly offset the decreased taxpayer funding for conservation management.

Otago farmers, keen to maintain their standard of living, are looking at alternative sources of income. I've heard a rumour that one idea down there is to charge beekeepers for apiary sites - pay up or get out. I hope it's only a rumour.

* * * * *

WAX MOTHS AND TOXIC CHEMICALS

I've warned you all before about using insecticides such as Vapona and borer bombs to kill wax moths. These chemicals become absorbed into the wax and will kill your bees when you put the boxes out. Well, I've just found another case where a semi-commercial beekeeper cum orchardist had taken off his honey and was all set to extract it. So far so good, except there were patches of brood and lots of bees still in the honey boxes.

Our friend didn't like this so he sprinkled some Vapona (dichlorvos) on to the concrete floor. Well, it killed the bees a treat but disaster struck when the extracted boxes were put back on the hives. What a mess. Out of 30 or so hives involved about six were completely dead, another 10 will be lucky to recover and the rest might just struggle through as nucs provided the queen hasn't been killed. And all that took only two days.

The only safe chemicals to use on honey combs are pure methyl bromide (no chloropicrin added), ethylene oxide, cyanogas or PDB crystals. The first three of these are highly toxic to humans so don't use them unless you have the relevant licence or experience.

- from Murray Reid, "Waikato Bee Notes".



* * * * *

FEEDING SUGAR SYRUP TO INCREASE KIWIFRUIT POLLINATION

To feed or not to feed - that was a question being asked often in the kiwifruit orchards last year. Some people saw colonies that were fed syrup collecting a lot more kiwifruit pollen than others, and that's a good indication of more pollination going on.

I reviewed hive standards for kiwifruit pollination in the autumn *New Zealand Beekeeper*, and had this to say about sugar feeding:

"British experiments found that feeding 40% sugar syrup to colonies pollinating field crops increase overall pollen gathering. Feeding sugar syrup to kiwifruit pollination colonies should increase their efficiency, though there are currently no scientific results to confirm this".

Well now there are. Mark Goodwin, a student at Auckland University, has just finished a Ph. D project entitled "Honey bee pollination of kiwifruit". One of his studies was on the effect of feeding syrup to pollination colonies.

Pollen traps were put on 24 hives which were part of a group pollinating a mature kiwifruit orchard at eight hives per hectare. Half the hives were fed sugar syrup (0.9 litres of 42% syrup) on the morning of 22 November 1984, and the pollen collected was measured every day. On 28 November the other half of the hives were fed, and this was repeated on 29 and 30 November.

The results? Feeding syrup to either group of hives increased the amount of kiwifruit pollen collected by them, compared with the group not being fed. The increase in pollen collection wasn't significant on the day of feeding, but was on the following day.

The increase in pollen collected was cumulative, so that after three days of feeding colonies were collecting twice as much as kiwifruit pollen as unfed ones.

The amount of pollen collected from plants other than kiwifruit did not increase. This may be because kiwifruit pollen was so much more available than other pollens, and it may be because kiwifruit is preferred by honey bees.

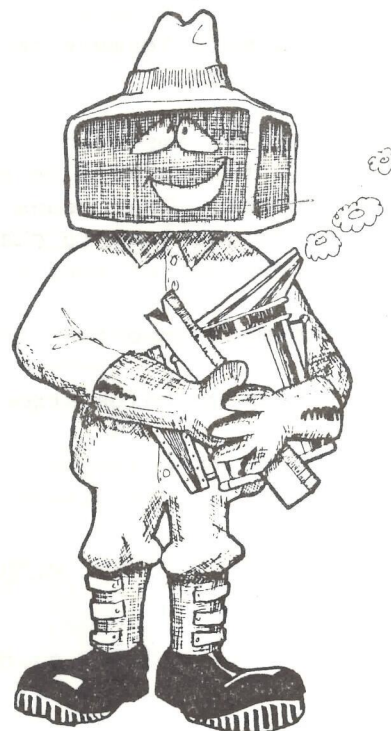
There are two important things to remember about this feeding trial. One is the way in which syrup was fed - inside the hive. This means that young bees (hive bees) collect and work the syrup. They thus aren't available to collect and process nectar from incoming foragers. The nectar foraging bees get a bit brassed off waiting around to be "unloaded", so some of them stop collecting nectar and change to pollen.

Pollen-collecting bees, of course, store their own material, and aren't dependent on hive bees to do this.

If you fed the syrup in the open, it would be collected by nectar-gathering foragers and not by hive bees, so there wouldn't be any shift towards pollen gathering by these foragers. Trials in orchards have confirmed that open feeding of syrup does not increase pollen gathering.

The other thing to remember is the time of feeding - in this case hives were fed in the morning. Then there is lots of kiwifruit pollen available, and the increased number of pollen gatherers visit kiwifruit. If the syrup is fed in the afternoon, when not much kiwifruit pollen is available, the increased amount of pollen collected might come mainly from non-target crops. That could be why, in these experiments, there was a big increase in kiwifruit pollen coming in but not in other pollens.

You have to read these results in conjunction with Mark Goodwin's other work that I've written about on pages 10-13. There he showed that in a well-stocked orchard the honey bees exhaust the supply of pollen by mid-afternoon anyway. So what's the point of feeding syrup to increase pollen collection if the bees are already collecting all that's available?



30.

We can best regard syrup feeding as only a short-term improvement for pollination units. You can ensure maximum bee activity on kiwifruit (that is, all the available pollen is removed), if an orchard has:

- colonies that are at least up to the kiwifruit pollination standard : a young queen, lots of bees and brood, and plenty of room to expand.
- a hive stocking rate of about 8 hives per hectare for mature blocks.

Feeding sugar can only be used as a stop-gap measure to bring about an immediate increase in pollen-gathering, when other parts of colony management have been poor.

Goodwin, R.M. 1986. Increased kiwifruit pollen collected after feeding sugar syrup to honey bees within their hive. *New Zealand Journal of Experimental Agriculture* 14 (1):57-61.

* * * * *

CHALKBROOD

With spring just around the corner it's time for a few words about chalkbrood. We in MAF have agreed on a policy towards this minor brood disease. This won't change things in Nelson much, as it isn't any different from my earlier attitude to chalkbrood.

The main parts of this policy are that:

- chalkbrood is regarded as established in New Zealand, and occurring in many (though not all) areas.
- where chalkbrood is discovered, MAF does not require comb or hive destruction, or quarantining of hives.
- permits to move or sell hives will not be refused because of chalkbrood infection.

The most important thing to realise about chalkbrood is that spores of this fungus will be present in many hives in areas where the disease is present. That means that you should concentrate on avoiding the conditions which can lead to chalkbrood outbreaks, rather than trying to keep the spores out of your hives.

The most important things you can do are to:

- ° keep colonies strong for the time of year, to avoid colony stress.
- ° requeen colonies regularly with Italian stock. Italians are much less prone to the disease than dark races.
- ° arrange hives in an anti-drift layout to reduce spore transfer between hives.
- ° select breeder queens which show low susceptibility to chalkbrood.

* * * * *

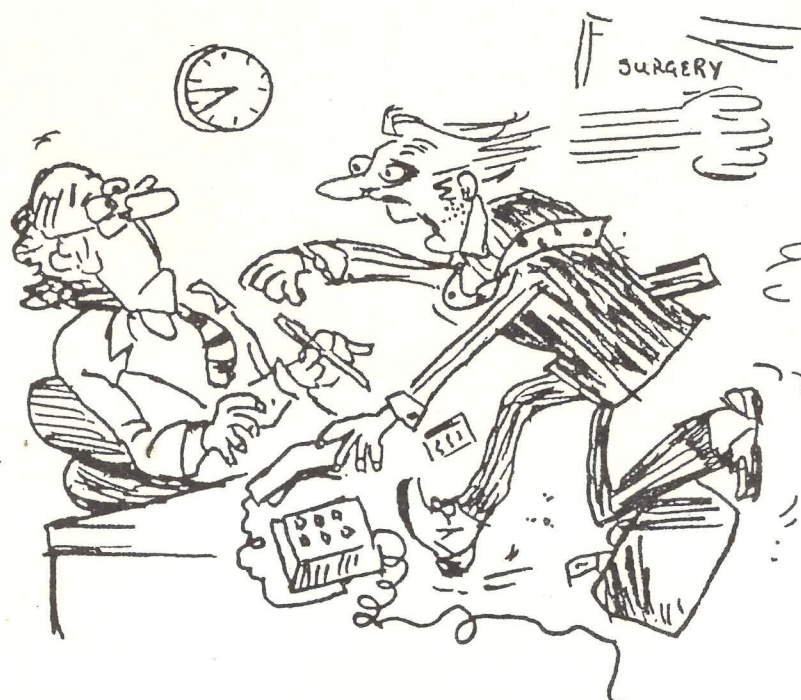
That's it from me for now. You can see the problem I have in winter with a bit more time on my hands - this magazine just grows and grows!

If you think this magazine is good value, then how about encouraging someone else to become a subscriber? The more people we have subscribing to it, the more successful it is likely to be.

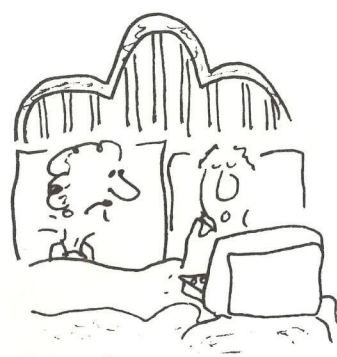
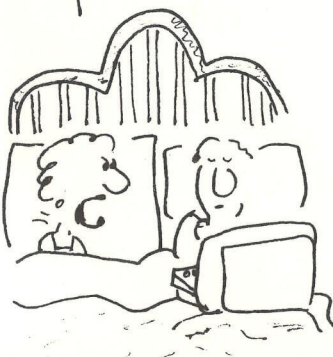
Good beekeeping!

Andrew Matheson

Andrew Matheson



"MORNING doctor - my wife thinks I'm suffering from stress...God is that the time? - let me have your views in triplicate - can I use the phone? - my secretary will do the medical...must rush - let's have lunch some time..."



ISSN 0113-0676

Ministry of Agriculture and Fisheries
Private Bag
Tauranga
New Zealand
Telephone (075) 82-069